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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NAFF, DAVID M

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/929,736

Applicant(s)

SCHUELLER ET AL

Examiner

David M. Naff

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38, 116-130 and 132 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-38, 116-130 and 132 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Art Unit: 1651

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for
5 continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/15/05 has been entered.

An amendment of 4/15/05 in response to an office action of
10 10/14/04 amended claims 1, 33, 38, 124 and 125, and canceled claim 131.

Claims examined on the merits are 1-38, 116-130 and 132, which are all claims in the application.

The text of those sections of Title 35, U.S. Code not included in
15 this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

Claims 1-38, 126-130 and 132 are rejected under 35 U.S.C. '112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not
20 described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Adequate support is not found in the specification for shapes as required by claim 1 wherein the "shape does not result from a surface
25 texture or pattern". While the specification recites (page 4, lines

Art Unit: 1651

10-11) "the stamping surface and a surface of the substrate may exhibit convexity in at least one dimension not resulting from a surface texture or pattern", this does not support each of the specific shapes of claim 1 not resulting from a surface texture or pattern. This disclosure supports only convexity not resulting from surface texture or pattern. Each of the shapes of claim 1 not resulting from a surface texture or pattern is an inventive concept not present in the specification as originally filed. Additionally, the specification fails to support each of the shapes of claim 1 having a lumen as required by dependent claims such as 33 and 116, and claims dependent thereon, and a channel as required by claim 11, and claims dependent thereon.

Claim Rejections - 35 USC § 112

Claims 1-38, 116-130 and 132 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the type of reasons in the previous office action of 1/29/04 and for reasons herein.

Claim 1 and claims dependent thereon are unclear as to structure of a stamp having each of the shapes claimed when the shape is not from a surface texture or pattern. The specification does not define structure for each stamp shape when the shape is not from surface texture or pattern.

Art Unit: 1651

In claim 1 (line 7) and claim 132, "balloon-like" is uncertain as to meaning and scope. Being "like" a balloon is relative and subjective.

Claims 33-36, 126-130 and 132, that require the stamp to contain
5 a lumen are unclear as to whether the lumen is contained by a stamp having each of the shapes of claim 1, or only certain of the shapes. It is not seen how all of the stamp shapes can have a lumen. For example, how can a balloon-like shape contain a lumen? This also applies to the other shapes other than a cylindrical shape. Claims
10 33-36, 126-130 and 132 are further unclear where the portal of the lumen is located when the stamp has each of the shapes of claim 1, and as to structure that constitutes a portal of a lumen.

Claims 116-125 are unclear how the lumen of the stamp and of the substrate, when present, functions in relation to the substrate to
15 provide patterning of a surface as required in the preamble of claim 116. It is further unclear as to how the portal of the lumen of the stamp and substrate functions in patterning a surface. It is further unclear as to structure that constitutes a portal of the lumen.

In view of the specification and drawings, when having a lumen,
20 the stamp or substrate is of tubular form containing a lumen, and the stamping surface is on the inside of the lumen when a tubular substrate is placed inside the lumen of the tubular stamp, or the stamping surface is on the outside of the tubular stamp when the tubular stamp is placed inside the lumen of a tubular substrate. When
25 requiring the stamp or substrate to have structure such as a lumen,

Art Unit: 1651

the claims should recite sufficient structure to make clear where the stamp or substrate contains the lumen relative to the whole structure of the stamp or lumen. Furthermore, the claims should be clear how the lumen of the stamp and substrate are combined, and the lumen of the substrate and stamp (claims 123-125) are combined to accomplish patterning a surface. Additionally, since claims 123-125 depend on claim 116 that require the stamp to have a lumen, it should be clear how the lumen of the stamp functions in combination with the lumen of the substrate when carrying out the patterning of a surface.

In claim 38, it is uncertain as to substrate structure that is open, partially closed or closed. Being open, partially closed or closed will be relative and subjective when there is no structure defined that is capable of being open, partially closed or closed.

Response to Arguments

While the amendment to claims 33, 124 and 125 provides additional clarity, the claims are still indefinite for reasons set forth above. The claims need to define additional structure to be clear as to stamp structure required and how the stamp structure functions in relation to the substrate. Description in the specification cannot be read into the claims to provide definiteness. The claims per se must be definite, clear and unambiguous as to metes and bounds.

In regard to claim 38, applicants have amended the claim to recite "three-dimensional surface". However, this still does not make clear as to surface structure that is open, partially closed or closed. As noted above, description in the specification cannot be

Art Unit: 1651

read into the claims for clarity. Moreover, the description in the specification at page 13, lines 4-7, does not make clear as to surface structure that is open, partially closed or closed.

As to "balloon-like", applicants urge that one will understand
5 this to mean generally like or similar to a balloon. However, being generally like or similar is relative and subjective, and is a matter of individual interpretation. While applicants may use functional language and define the invention in whatever terms he chooses, this does not permit the use of language that is essentially indeterminate
10 as to meaning and scope. Furthermore, the specification does not define the metes and bounds of "balloon-like", i.e. structure that is like a balloon and not like a balloon.

Claim Rejections - 35 USC § 103

Claims 1-7, 9-13, 24-26, 30-32, 37, 38, 126-130 and 132 are
15 rejected under 35 U.S.C. 103(a) as being unpatentable over Maracas et al (5,669,303) in view of Whitesides et al (6,180,239 B1).

The claims are drawn to a method of patterning a surface by providing a stamp having a stamping surface, disposing a substrate proximate to the stamping surface and modulating the dimensions of the
20 stamp to place the stamping surface in contact with the substrate. The stamp has a shape selected from the group consisting of cylindrical, spherical, elliptical, spheroidal, polygonal, balloon-like and combinations thereof, wherein the shape does not result from a surface texture or pattern.

Art Unit: 1651

Maracas et al disclose stamping a surface with a flexible stamp by using pressure to cause the flexible stamp to change shape and contact a surface to be stamped.

Whitesides et al disclose patterning a surface by using a stamp
5 having different shapes (Figures 3a-16d), and patterning can be by deforming a flexible planar stamp (col 11, lines 11-13).

It would have been a matter of obvious choice depending on individual preference and convenience to provide the stamp of Maracas et al with a preferred shape as disclosed by Whitesides et al in the
10 absence of unexpected functioning of the stamp. Changing the shape of a stamp without changing its function would have been a matter of individual preference well within the ordinary skill of the art. Whitesides et al disclose (col 9, lines 35-50) deforming the stamp prior to stamping, and would have further suggested deforming the
15 stamp prior to disposing the substrate.

Response to Arguments

Applicants urge that the combined teachings of the references do not suggest the claimed shapes. However, it is clear from Whitesides et al that a stamp can have various shapes such as cylindrical,
20 spherical or spheroidal (Figs. 5b and 5c). Also, see Figs. 3a-3c as to other shapes. No unexpected result is seen in changing the shape of the stamp of Maracas et al to that suggested by Whitesides et al.

Claim Rejections - 35 USC § 103

Claims 8 and 27-29 are rejected under 35 U.S.C. 103(a) as being
25 unpatentable over the references as applied to claims 1-7, 9-13, 24-26

Art Unit: 1651

30-32, 37, 38, 126-130 and 132 above, and further in view of Kumar et al (5,512,131).

Claim 8 requires exposing the substrate to electromagnetic radiation through the stamp, and a portion of the stamp is opaque to the radiation. Claims 27-29 require removing the stamp and using a second stamp.

Kumar et al disclose using electromagnetic radiation when stamping to put patterns on surfaces (col 3, line 63, col 4, lines 64-65, col 14, lines 33-37, col 16, line 27, col 18, lines 23-25 and col 20, lines 34-35) to convert a species from one state to another. Further disclosed is the use of second stamp (col 3, lines 8-15) to provide a second species.

It would have been obvious to pass electromagnetic radiation through the stamp of Maracas et al onto the substrate being stamped to obtain the function of electromagnetic radiation as disclosed by Kumar et al to convert a species from one state to another. Having a portion of the stamp opaque would have been obvious to control the where the electromagnetic radiation contacts the substrate.

It would have been further obvious to use in Maracas et al a second stamp as taught by Kumar et al to provide a second species on the substrate. Furthermore, the disclosure of Whitesides et al (col 9, lines 1-10) of contacting the stamp with a surface in a first orientation, removing the stamp, rotating the stamp and reapplication of the stamp to the surface to obtain a grid pattern would have further suggested removing the stamp and applying a second stamp when

Art Unit: 1651

a grid pattern is desired. If needed, Singhvi et al would have further suggested using a second stamp (col 22, lines 46-59).

Response to Arguments

Applicants have not addressed this rejection separately.

5 Providing a stamp having a shape as claimed is obvious for reasons set forth above.

Claim Rejections - 35 USC § 103

Claims 14-23, 33-36 and 116-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to
10 claims 1-7, 9-13, 24-26 30-32, 37, 38, 126-130 and 132 above, and further in view of Anderson et al (6,645,432 B1).

Claims 14-23 require passing fluid through channels contained by the stamping surface. Claims 33-36 and 116-119 require the stamp to contain a lumen.

15 Anderson et al disclose stamping patterns on a surface using a stamp containing channels through which fluid is passed. For example, see col 5, line 34 to col 6, line 16.

It would have been obvious to provide the stamp of Maracas et al with channels containing fluid to obtain the function of the fluid to
20 form a pattern as disclosed by Anderson et al. Channels in the stamp of Anderson et al will inherently contain a lumen as required by claims 33-36 and 116-119 since certain channels are of tubular form.

Art Unit: 1651

Response to Arguments

This rejection has not been separately addressed. As set forth above, a stamp having a shape as claimed is suggested by the references applied above.

5 ***Conclusion***

Claims 120-125 are free of the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be
10 reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 751-273-8300.

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Art Unit: 1651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David M. Naff
Primary Examiner
Art Unit 1651

DMN

6/18/05